

New York State Department of Environmental Conservation  
Division of Solid & Hazardous Materials  
Bureau of Waste Reduction & Recycling  
50 Wolf Road, Albany, New York 12233-7253  
518-457-6072 FAX 518-457-1283

DEC 18 1997



John P. Cahill  
Commissioner

Mr. Kevin Hildreth  
Environmental Compliance Manager  
Photocircuits Corporation  
31 Sea Cliff Avenue  
Glen Cove, NY 11542

Dear Mr. Hildreth:

RE: Biennial Update (BU)  
Photocircuits Corporation  
EPA ID# NYD096920483

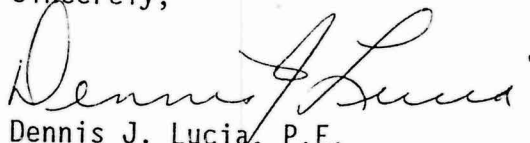
Based on our review of your Biennial Update, submitted on October 29, 1997, and revisions to the update received on December 10, 1997, we find that your Biennial Update meets the Hazardous Waste Reduction Planning Requirements of Article 27, Section 0908 of the Environmental Conservation Law.

Please submit an Annual Status Report as required by the law on July 1, 1998 on your progress in achieving the time schedule in your update for implementing waste reduction measures identified. The status report must include an update of Table 1 and Table 2, and must be submitted by July 1 for each year that a hazardous waste reduction plan Biennial Update is not submitted.

We encourage you to make pollution prevention an ongoing process, and to look for additional hazardous waste technologies that can be implemented at your facility. The ongoing development and implementation of a waste reduction training program for your facility personnel is an important ingredient for the continued success of your waste reduction program.

If you have any questions, please contact Mr. Juzer Rasani at (518) 457-6072.

Sincerely,

  
Dennis J. Lucia, P.E.  
Supervisor  
Hazardous Waste Minimization Section

Enclosure

cc: A. Cava, Region I  
J. Reidy, EPA Region II

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
HAZARDOUS WASTE REDUCTION PLAN/BIENNIAL UPDATE  
FACILITY SUMMARY SHEET

DATE: 12/18/97 Accepted.

EPA ID #	NYD096920483
COMPANY NAME	Photocircuits Corp.
ADDRESS	31 seaCliff Avenue
CITY	Glen Cove
STATE	NY
ZIPCODE	11542
FACILITY CONTACT	Kevin Hildreth
PHONE #	516-674-1274
SIC CODE	3672
REGION (NYS)	1
FINAL HSWA PERMIT EFFECTIVE DATE	
FINAL NYS PART 373 PERMIT EFFECTIVE DATE	

DESCRIPTION OF ORIGINAL PROCESS:

Hazardous waste is generated due to plating etching, cleaning and solder flux process in the production of printed circuit boards.
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DESCRIPTION OF WASTE REDUCTION ACTIVITY:


Company Name: Photocircuits Corporation	EPA I.D. Number NYD096920483
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## HAZARDOUS WASTE GENERATION SUMMARY

Table 1

Table 1													
Waste Stream Number	Name of Waste	Source of Generation	Disposal Method	Quantity of Waste Generated (tons)				Indices (lb waste generated /sq. ft. panels produced)					
				1993	1994	1995	1996	Theo	1993	1994	1995	1996	
0001	Cupric Chloride	copper etching	recycle	3182	4236	3492	0		3.061	2.943	2.199	0.000	
0002	Ammoniacal Etchant	copper etching	recycle	996	1410	835	0		0.958	0.980	0.526	0.000	
0003	Copper Reduction	copper plating	chemical treatment	1047	1039	692	0		1.007	0.722	0.436	0.000	
0004	Plating Sludge	waste water treatment GM-3,3a	recycle	864	721	1077	1508		0.831	0.501	0.678	0.865	
0009	PM Acetate	screen washing	recycle	0	0	0	0		0.000	0.000	0.000	0.000	
0010	Solder Flux	solder application GM-5	fuel blend	128	197	268	309		0.123	0.137	0.169	0.177	
0012	Batch Treatment	Printed Circuit Board Process	chemical treatment	No Data	3728	2538	0		0.000	2.590	1.598	0.000	
0013	Spent Micro Etch	copper plating GM 11, 15 & 16	chemical treatment	0	0	0	3374		0.000	0.000	0.000	1.935	
0014	Spent Acid Cleaner	copper plating GM 14	chemical treatment	0	0	0	34		0.000	0.000	0.000	0.019	
0015	Spent Carbon	copper plating gm 6, 12	chemical treatment	0	0	0	17		0.000	0.000	0.000	0.010	
0016	Dowanol/Thinner	GM 7 solder mask application	recycle	0	0	0	12		0.000	0.000	0.000	0.007	

Company Name: Photocircuits Corporation	EPA I.D. Number NYD096920483
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## HAZARDOUS WASTE REDUCTION PROGRAM

Table 2

[illegible]

*John Filippelli* *File - FYI -*  
*File*

**New York State Department of Environmental Conservation**

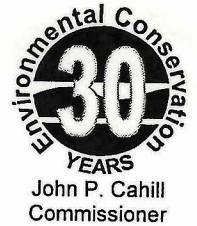
**Division of Solid and Hazardous Materials**

**Bureau of Hazardous Waste Management, Room 448**

50 Wolf Road, Albany, New York 12233-7251

Phone: (518) 457-9257 • FAX: (518) 485-8769

Website: [www.dec.state.ny.us](http://www.dec.state.ny.us)



*16B2*

June 23, 2000

Mr. Charles Nehrig  
Compliance Manager, Environmental Health & Safety  
Photocircuits Corp.  
31 Sea Cliff Ave.  
Glen Cove, NY 11542

Dear Mr. Nehrig:

Re: Biennial Update (BU)  
Photocircuits Corp.

EPA ID# ~~NYD 096 820 483~~

*NYD 096 920 483*

Based on our review of your Biennial Update (BU) of the Hazardous Waste Reduction Plan, received on July 2, 1999, we find that your update meets the requirements of Article 27, Section 0908 of the Environmental Conservation Law.

Please submit an Annual Status Report (ASR) as required by the law by July 1, 2000, on your progress in achieving the time schedule in your update for implementing waste reduction measures identified. The ASR must include an update of Table 1 and Table 2, and must be submitted by July 1 for each year that a Hazardous Waste Reduction Plan, Biennial Update is not submitted.

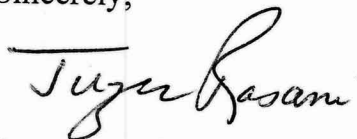
We encourage you to make pollution prevention an ongoing process, and to look for additional hazardous waste reduction technologies that can be implemented at your facility. The ongoing development and implementation of a waste reduction training program for your facility personnel is an important ingredient for the continued success of your program.



Mr. Charles Nehrig

If you have any questions please contact me at, (518) 485-8988.

Sincerely,

A handwritten signature in black ink, reading "Juzer Rasani". The signature is fluid and cursive, with the first name "Juzer" and last name "Rasani" clearly distinguishable.

Juzer Rasani  
Environmental Engineer  
Technical Determination Section  
Bureau of Hazardous Waste Management  
Division of Solid & Hazardous Materials

enclosure

cc w/ enc. : A. Cava, Reg. 1  
J. Reidy, EPA-Region II



**New York State Department of Environmental Conservation  
Hazardous Waste Reduction Plan / Biennial Update  
Facility Summary Sheet**

**Date:** June 23, 2000

<b>EPA ID#</b>	NYD 096 920 483
<b>Company Name</b>	Photocircuits corp
<b>Address</b>	31 Seacliff Ave
<b>City</b>	Glen Clove
<b>State</b>	NY
<b>Zip Code</b>	11542
<b>Facility Contact</b>	Mr. Charles Nehrig
<b>Phone</b>	(516) 609-1052
<b>SIC Code</b>	3672
<b>Region (NYS)</b>	1
<b>Final HWSA Permit Effective Date</b>	
<b>Final NYS Part 373 Permit Effective Date</b>	

**Description of Original Process:**

Hazardous Waste Generated due to plating, etching, cleaning, and solder flux process in the production of printed circuit boards.

**Description of Waste Reduction Activity:**

1.) Improve Waste segregation.

Company Name: Photocircuits Corporation	EPA I.D. Number NYD096920483	HWRP 1998 Page 1 of 2	Table 1
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Waste Stream Number	Name of Waste	Form GM Page #	Form GM Section 1a Description	Source of Generation	Disposal Method	Quantity of Hazardous Waste Generated (tons)					Indices (lb waste generated /ft <sup>2</sup> panels produced) x 10				
						1994	1995	1996	1997	1998	1994	1995	1996	1997	1998
0001	Cupric Chloride	N/A	N/A	copper etching	recycle	4236	3492	0	0	0	2.943	2.199	0.000	0.000	0.000
0002	Ammoniacle Etchant	N/A	N/A	copper etching	recycle	1410	835	0	0	0	0.980	0.526	0.000	0.000	0.000
0003	Copper Reduction	N/A	N/A	copper plating	chemical treatment	1039	692	0	0	0	0.722	0.436	0.000	0.000	0.000
0004	Plating Sludge	1998 GM 7, 7A 1997 GM 10, 10A	Spent metallic sludge from waste treatment operation of Copper plating lines.	waste water treatment	recycle	721	1077	1508	1034	903	0.501	0.678	0.865	1.049	0.810
0009	PM Acetate	1998 GM 6 1997 GM 7, 9	Waste organic solution from machinery cleaning operation.	Preventative maintenance cleaning screen washing	fuel blend	0	0	0	5	10.4	0.000	0.000	0.000	0.005	0.009
0010	Solder Flux	1998 GM 4 1997 GM 4	Spent organic solder flux form Solder Operation	solder application	fuel blend	197	268	309	303	307	0.137	0.169	0.177	0.307	0.275
0012	Batch Treatment			Printed Circuit Board Process	chemical treatment	3728	2538	0	0	0	2.590	1.598	0.000	0.000	0.000
0014	Spent Acid Cleaner	1998 GM 10 1997 GM 17	Acidic cleaning solution used to clean boards prior rto the application of solder	solder preclean	chemical treatment	0	0	38	534.5	416.5	0.000	0.000	0.022	0.542	0.374
0015	Spent Carbon	1998 GM 3 1997 GM 3, 12	Spent carbon from plating bath filtering operation	solder electroplating	fuel blend	0	0	17	7.3	9.2	0.000	0.000	0.010	0.007	0.008
0016	Dowanol/Thinner	1998 GM 2 1997 GM 2	Spent organic solution from printed circuit board manufacturer.	solder mask application	fuel blend	0	0	12	10	8.8	0.000	0.000	0.007	0.010	0.008
0017	Spent Microetch	1998 GM 13 1997 GM 11	Spent acidic inorganic solution used in etching process.	Solder Application	chemical treatment	0	0	352	4211	5373	0.000	0.000	0.202	4.272	4.819
0018	Spent Plating Bath	1998 GM 11 1997 GM 15	Spent acidic inorganic solution from electro plating baths.	Nickel Solder	chemical treatment	0	0	10	315	278.5	0.000	0.000	0.006	0.320	0.250
0019	Spent Brown Oxide	1998 GM 12 1997 GM 16	Caustic solution used to oxidize surface of board.	Surface Preparation	chemical treatment	0	0	4	112	131.8	0.000	0.000	0.002	0.113	0.118
0020	Spent Copper Red.	1998 GM 9 1997 GM 14	Spent acidic inorganic solution from electroless plating bath	Spent electroless copper	chemical treatment				4	2.3				0.004	0.002
0021	Parts Cleaner Solvent	1998 GM 5 1997 GM 5	Waste cleaning solvent from parts cleaner	Parts Solvent, Safety Klean	recycled, off sight				0.038	0.6				0.000	0.001
0022	Spent Caustic Cleaner	1997 GM 13	Spent caustic cleaning solution from plating operation.	Cleaning Copper Reduction Line	chemical treatment				4	0				0.004	0.000
0023	Resist Skins	1997 GM 8	Organic waste from stripping operation	Photoimaging					81	0				0.082	0.000
0024	Al Chelate	1997 GM 6	Waste caustic converter used in circuit board manufacture	Oxidation in Multilayer Board Production					1.8	0				0.002	0.000
0025	Spent Carbon	1998 GM 8	Spent carbon sludge from plating filter bath.	copper electroplating	chemical treatment					68.2				0.000	0.061



Company Name: Photocircuits Corporation	EPA I.D. Number NYD096920483	HWRP 1998 Page 2 of 2	Table 2
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HAZARDOUS WASTE REDUCTION PROGRAM

Waste Stream Number	Name of Waste	Waste Stream Affected	Reduction Plans/Projects	Established Waste Reduction (tons)	Method Used to Calculate ROI	ROI (est.)	Goal Date	Remarks
0001	Cupric Chloride	Copper Etchant	Recycle off site	0				Completed, 100% material being recycled.
0002	Ammoniacal Etchant	Copper Etchant	Recycle off site	0				Completed, 100% material being recycled.
0003	Copper Reduction	Copper Plating	None available	0				
0004	Plating Sludge	Waste Water Treatment	sludge dryer	0	AC	12 -24 Months		Metal reclamation system not economically feasible
0009	PM Acetate	Screen Washing	substitution	0				Product substitution, no haz. waste generation.
0010	Solder Flux	Solder Application	substitution for raw material in new process	0	PI	Ongoing	Ongoing	Reduced Reliance on Chemistry
0012	Batch Treat	Production Rinsing	Recycle in Deionization Plant	0	IRR		Dec-98	System presently recycling 50 GPM
0015	Spent Carbon	Plating bath filter	None available	0				
0016	Dowanol/ Thinner	Product Thinner	None available	0				
0017	Spent Microetch	Etchant	None available	0				
0018	Spent Plating Bath	Nickel Solder Plating Bath	Off site recycle	0				
0019	Spent Brown Oxide	Surface Preparation	None available	0				
0020	Spent Copper Reduction	Spent Electroless copper						
0021	Parts Cleaner Solvent	Parts solvent Safety Kleen	Recycle off site					
0022	Spent Caustic Cleaner	Cleaning Copper Reduction Line	This waste not generated in 1998					
0023	Resist Skins	Photoimaging	Improved waste segregation and reclassified skins as non-hazardous based on lab analysis	81	PI	6 Months	Complete	exceed waste reduction goal-100% of resist skin are noe-haz. Due to improved waste segregation
0024	Al Chelate	Multilayer Board Production	This waste not generated in 1998, not effective process	1.8	IRR	6 Months		Discontinued use of Chemistry